

CLAIMS

1. A fastening arrangement for a split casing assembled by fastening a plurality of casing segments comprising:

a first and a second casing segments assembled together by joining joint faces of the respective casing segments, said first and second casing segments are provided with bolt holes in such a manner that the bolt hole of the first casing segment and the bolt hole of the second casing segment align with each other and, when the first and the second casing segments are assembled together, form a continuous bolt hole crossing the joint faces and extending in both casing segments and, at least the bolt hole in the first casing segment is provided with an internal screw thread;

a sleeve having an external screw thread and being fitted into the bolt hole of the first casing segment by engaging the external screw thread of the sleeve with the internal screw thread of the bolt hole of the first casing segment; and

a fastening bolt provided with fastening means and passing through the bolt hole of the first casing segment and the sleeve therein, wherein said fastening means abuts an end of the sleeve opposite to the joint face and, when a tensile force is exerted on the fastening bolt at the portion between the fastening means and the second casing segments, the tensile force is first transferred from the fastening bolt to the sleeve through the abutment of the fastening means and the end face of the sleeve, then transferred from the sleeve to the first casing segment through the engagement of the external screw thread of the sleeve and internal screw thread of the bolt hole and generates a fastening force for pressing the first casing segment against the second casing segment.

2. A fastening arrangement for a horizontally split type casing for a hydraulic machine in which the

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Sub casing of the hydraulic machine is assembled by fastening two casing halves comprising:

a first and a second casing halves assembled together by joining joint faces of the
5 respective casing halves, said first and second casing halves are provided with bolt holes in such a manner that the bolt hole of the first casing half and the bolt hole of the second casing half align with each other and, when the first and the second casing halves are assembled
10 together, form a continuous bolt hole crossing the joint faces and extending in both casing halves, said bolt holes in the first and the second casing halves are provided with internal screw threads;

a sleeve having an external screw thread
15 and being fitted into the bolt hole of the first casing half by engaging the external screw thread of the sleeve with the internal screw thread of the bolt hole of the first casing half;

a fastening bolt provided with an external
20 screw thread at one end for engaging the internal screw thread of the bolt hole in the second casing half and fastening means at the portion apart from said external screw thread, said fastening bolt passing through the bolt hole of the first casing half and the sleeve
25 therein, wherein said fastening means abuts an end of the sleeve opposite to the joint face when the fastening bolt is screwed into the bolt hole in the second casing half, whereby a tensile force generated in the fastening bolt by screwing the fastening bolt into the bolt hole in the
30 second casing half is first transferred from the fastening bolt to the sleeve through the abutment of the fastening means and the end face of the sleeve, then transferred from the sleeve to the first casing segment through the engagement of the external screw thread of
35 the sleeve and internal screw thread of the bolt hole in the first casing half and generates a fastening force for pressing the first casing half against the second casing

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half.

3. A fastening arrangement as set forth in claim 2, wherein an enlarged diameter portion integrally formed on a shaft portion of the fastening bolt acts as the fastening element for abutting the end face of the sleeve.

4. A fastening arrangement as set forth in claim 2, wherein an external screw thread is provided on a shaft portion of the fastening bolt and a nut engaging said external screw acts as the fastening element for abutting the end face of the sleeve.

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